



Harmonisation of datasets on soil distribution using WRB Experiences from a French-German cross-boundary soil map in the framework of INSPIRE



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INSPIRE – better access to environmental information in Europe

The EU directive INSPIRE (2007/2/EC) intends to establish an Infrastructure for SPatial InfoRmation in Europe. Data for environmental politics shall be made better accessible through technical interoperability and harmonisation. Soil is one 34 themes covered by this legislation. Within the framework of the project GS Soil, we tested to harmonise data on soil distribution on either side of the French-German border along the upper Rhine river, (Fig. 1) using WRB as common soil classification. (IUSS WG WRB 2007)

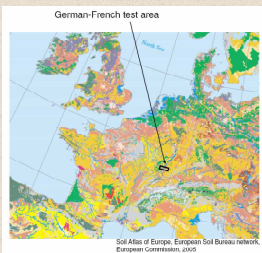


Fig. 1: Location of the study area in Europe

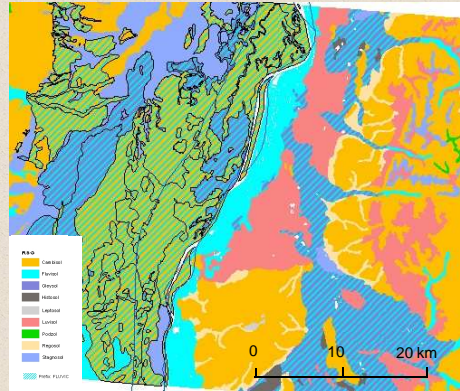


Fig.2: Harmonised French-German WRB soil map

Table 1: Per profile represented area in France and Germany

Percentage of area (of mapping unit)	France		Germany	
	No of profiles	% (n = 227)	No of profiles	% (n = 104)
< 10 %	106	46	10	10
10 - < 30 %	76	33	27	26
30 - < 70 %	35	15	60	58
≥ 70 %	14	6	6	6

Table 2: Soil data used for identification of RSGs

Germany	France
Horizon notation	Horizon notation
Horizon thickness	Horizon thickness
Layering	Layering
Texture (classes)	Texture (measured & classes)
Stoniness (classes)	Stoniness (estimated)
Organic Matter (classes)	Organic Matter (measured & classes)
Carbonate Content (classes)	Carbonate Content (measured/classes)
Soil Reaction (classes)	Soil Reaction (measured)
Base saturation (derived)	Base saturation (derived)
CEC (estimated/derived)	CEC (measured)
Not available	Soil Structure (classes)

lar mapping styles and cross-border harmonisation of geometries and content.

• **INSPIRE soil data access does not replace a common European soil map with aligned mapping approaches and coordinated map edition procedures.**

References

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Data

The French data are taken from "Référentiel régional pédologique d'Alsace au 1:250.000 ème", the German data from the Soil map of Germany 1:200,000. Profile information on the French side was more detailed, i.e. more characterizing soil units per unit area (Tab. 1) and more parameters described. The legend of the French map is structured using great soilscapes, in the German part with soil regions. Both are based on similar approaches and combine relief and geological information. Table 2 shows which parameters were used to derive the Reference Soil Groups (RSG) according to WRB 2006, update 2007. Classified values and non-consistent class boundaries, different horizon designation systems etc., reduce the quality of classing results.

Conclusions

- Existing soil data sufficient to derive most WRB RSG and even some important qualifiers (only *Fluvisol* shown in Fig. 2).
- Aggregation levels of the legends are comparable here, but have to be harmonised in other cases as well
- Nonetheless, the border between both countries (in the middle of the river Rhine) can easily be identified in the map (Fig. 2) due to differently described associations of soils and possibly uncertainties in WRB naming from national data.
- Technical interoperability as the primary goal of INSPIRE and the use of the same soil classification alone does not warrant a high quality map product. Full harmonisation would include simi-

<http://www.gssoil.eu>
<http://gssoil-portal.eu>

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